

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

05 - Engineering and Manufacturing Development

PE NUMBER AND TITLE

0604441F Space Based Infrared Systems (SBIRS)
High EMD

PROJECT

3616

COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3616 SBIRS High Element EMD	550,144	438,720	814,927	620,348	445,606	302,997	308,136	578,800	5,769,700
Quantity of RDT&E Articles	0	0	1	1	0	1	1	0	4

(U) **A. Mission Description**

(U) The Space-Based Infrared System's (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces or its allies. SBIRS will incorporate new technologies to enhance detection; improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches; and provide critical mid-course tracking and discrimination data for national and theater missile defense. SBIRS also supports Battlespace Characterization and Technical Intelligence. The SBIRS System provides increased detection and tracking performance in order to meet requirements in US Space Command's Capstone Requirements Document and Air Force Space Command's Operational Requirements Document. SBIRS will consist of satellites in Geosynchronous Orbits (GEO), Highly Elliptical Orbits (HEO) and Low Earth Orbits (LEO) and an integrated centralized ground station serving all SBIRS space elements and Defense Support Program (DSP) satellites. This Program Element funds the GEO & HEO portions of SBIRS with their associated ground elements.

(U) **FY 2001 (\$ in Thousands)**

(U) \$530,069 Continued EMD contracts for Space and Ground segment development (includes GFE, GEO Development, GEO 1&2 build, GEO 1&2 integration and test, HEO development/production, Ground System development, System Engineering and Program Management, and Host SPO support).

(U) \$3,794 Continued System Program Office Support.

(U) \$16,281 Continued Technical analysis and independent verification and validation of contractor by FFRDC.

(U) \$550,144 Total

Project 3616

Page 1 of 6 Pages

Exhibit R-2 (PE 0604441F)

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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$414,451 Continued EMD contracts for Space and Ground segment development (includes GFE, continued GEO Development, GEO 1&2 integration, assembly and test, HEO development/production, HEO 1 integration, assembly, and test, Ground System development, System Engineering and Program Management, Increment 1 Pre-operations support and Host SPO support).</p> <p>(U) \$6,156 Continued System Program Office Support.</p> <p>(U) \$18,113 Continued technical analysis and independent verification and validation of contractor by FFRDC.</p> <p>(U) \$438,720 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$789,188 Continue EMD contracts for Space and Ground segment development (includes GFE, continued GEO Development, GEO 1&2 integration, assembly and test, HEO development/production, HEO 2 integration, assembly, and test, Ground System development, System Engineering and Program Management, Increment 1 Pre-operations support and Host SPO support).</p> <p>(U) \$6,170 Continue System Program Office Support.</p> <p>(U) \$19,569 Continue technical analysis and independent verification and validation of contractor by FFRDC.</p> <p>(U) \$814,927 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>(U) This program is assigned to Budget Activity 5, Engineering and Manufacturing Development because it funds the EMD activities for the SBIRS High program.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">563,967</td> <td style="text-align: right;">405,229</td> <td style="text-align: right;">334,753</td> <td style="text-align: right;">5,197,385</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">569,188</td> <td style="text-align: right;">445,229</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td style="text-align: right;">-3,984</td> <td style="text-align: right;">-6,509</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td style="text-align: right;">-13,148</td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td style="text-align: right;">-676</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	563,967	405,229	334,753	5,197,385	(U) Appropriated Value	569,188	445,229			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-3,984	-6,509			b. Small Business Innovative Research	-13,148				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-676			
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Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 5%; text-align: center;"><u>FY 2001</u></th> <th style="width: 5%; text-align: center;"><u>FY 2002</u></th> <th style="width: 5%; text-align: center;"><u>FY 2003</u></th> <th style="width: 5%; text-align: center;"><u>FY 2004</u></th> <th style="width: 5%; text-align: center;"><u>FY 2005</u></th> <th style="width: 5%; text-align: center;"><u>FY 2006</u></th> <th style="width: 5%; text-align: center;"><u>FY 2007</u></th> <th style="width: 10%; text-align: center;"><u>Cost to</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) Missile Procurement (PE 0305915F, BA-05, P-30)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">97,500</td> <td style="text-align: center;">500,754</td> <td style="text-align: center;">0</td> <td style="text-align: center;">7,254</td> <td style="text-align: center;">32,844</td> <td style="text-align: center;">638,352</td> </tr> <tr> <td>(U) Other Procurement (PE 0305915F, BA-03, P-55)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">693</td> <td style="text-align: center;">1,185</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,878</td> </tr> <tr> <td>(U) Related RDT&E:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) PE 0305911F - DSP (BA 07, R-187)</td> <td style="text-align: center;">12,779</td> <td style="text-align: center;">6,142</td> <td style="text-align: center;">2,090</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,922,136</td> </tr> </tbody> </table> <p>(U) <u>E. Acquisition Strategy</u> The pre-EMD SBIRS contracts were competed in full and open competition. Two contracts were awarded to Lockheed/Loral/Aerojet and Hughes/TRW in 1995 for the pre-EMD phase. A single contract was awarded to Lockheed Martin in 1996 for the EMD phase.</p> <p>(U) <u>F. Schedule Profile</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%;"></th> <th style="width: 20%; text-align: center;"><u>FY 2001</u></th> <th style="width: 20%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>									<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	e. 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(U) F. Schedule Profile Continued

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Payload Critical Design Reviews (2)			*	*								
(U) Ground Inc-1- Consolidated DSP Stations					*							
(U) Ground Inc-2 Critical Design Review				*								
(U) GEO Critical Design Review				*								
(U) HEO Payload #1 Delivery									X			
(U) HEO Payload #2 Delivery (FY04)												
(U) GEO Satellite #1 Delivery (FY06)												
(U) GEO Satellite #2 Delivery (FY07)												
*-Completed Event X-Planned Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002																																																																																																																																																																																												
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Contract			4,780	4,780	4,780				0	4,780	<u>Adjustment</u>											Technology	Various	Sep 95	11,600	11,600	11,600				0	11,600	Phenomenology	Various	Sep 95	17,350	17,350	17,350				0	17,350	Sandia Natl Lab (Cobra	Various	Sep 95	10,000	10,000	10,000				0	10,000	Brass)											<u>Support and Management Organizations</u>											Aerospace Corp	MORD	Sep 95	237,395	237,395	62,062	16,281	18,113	19,569	94,283	210,308	Prgm Mgmt Supt	Various	Sep 95	76,848	76,848	32,854	3,794	6,156	6,170	27,874	76,848	<u>Test and Evaluation Organizations</u>											Not Applicable										
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(U) EMD Contract	530,069	414,451	789,188																																																																																																																																																																																																
(U) System Program Office Support	3,794	6,156	6,170																																																																																																																																																																																																
(U) Aerospace Corp	16,281	18,113	19,569																																																																																																																																																																																																
(U) Total	550,144	438,720	814,927																																																																																																																																																																																																
<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>																																																																																																																																																																																									
<u>Product Development Organizations</u>																																																																																																																																																																																																			
LMMS & Hughes (Pre-EMD)	C/CPFF	Aug 95	207,880	207,880	207,880				0	207,880																																																																																																																																																																																									
LMMS/Other (EMD)	C/CPAF	Nov 96	4,652,110	4,652,110	1,363,472	530,069	414,451	789,188	2,133,754	5,230,934																																																																																																																																																																																									
SBIRS Pre-EMD Contract			4,780	4,780	4,780				0	4,780																																																																																																																																																																																									
<u>Adjustment</u>																																																																																																																																																																																																			
Technology	Various	Sep 95	11,600	11,600	11,600				0	11,600																																																																																																																																																																																									
Phenomenology	Various	Sep 95	17,350	17,350	17,350				0	17,350																																																																																																																																																																																									
Sandia Natl Lab (Cobra	Various	Sep 95	10,000	10,000	10,000				0	10,000																																																																																																																																																																																									
Brass)																																																																																																																																																																																																			
<u>Support and Management Organizations</u>																																																																																																																																																																																																			
Aerospace Corp	MORD	Sep 95	237,395	237,395	62,062	16,281	18,113	19,569	94,283	210,308																																																																																																																																																																																									
Prgm Mgmt Supt	Various	Sep 95	76,848	76,848	32,854	3,794	6,156	6,170	27,874	76,848																																																																																																																																																																																									
<u>Test and Evaluation Organizations</u>																																																																																																																																																																																																			
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Project 3616				Page 5 of 6 Pages				Exhibit R-3 (PE 0604441F)																																																																																																																																																																																											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002																																																																																																															
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604441F Space Based Infrared Systems (SBIRS) High EMD			PROJECT 3616																																																																																																														
<p>(U) <u>Government Furnished Property:</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Item</u> <u>Description</u></th> <th style="text-align: left;"><u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u></th> <th style="text-align: left;"><u>Award or</u> <u>Obligation</u> <u>Date</u></th> <th style="text-align: left;"><u>Delivery</u> <u>Date</u></th> <th style="text-align: right;"><u>Total Prior</u> <u>to FY 2001</u></th> <th style="text-align: right;"><u>Budget</u> <u>FY 2001</u></th> <th style="text-align: right;"><u>Budget</u> <u>FY 2002</u></th> <th style="text-align: right;"><u>Budget</u> <u>FY 2003</u></th> <th style="text-align: right;"><u>Budget to</u> <u>Complete</u></th> <th style="text-align: right;"><u>Total</u> <u>Program</u></th> </tr> </thead> <tbody> <tr> <td colspan="10"><u>Product Development Property</u></td> </tr> <tr> <td colspan="10">Not Applicable</td> </tr> <tr> <td colspan="10"><u>Support and Management Property</u></td> </tr> <tr> <td colspan="10"><u>Test and Evaluation Property</u></td> </tr> <tr> <td colspan="4"></td> <td style="text-align: right;"><u>Total Prior</u></td> <td style="text-align: right;"><u>Budget</u></td> <td style="text-align: right;"><u>Budget</u></td> <td style="text-align: right;"><u>Budget</u></td> <td style="text-align: right;"><u>Budget to</u></td> <td style="text-align: right;"><u>Total</u></td> </tr> <tr> <td colspan="4"><u>Subtotals</u></td> <td style="text-align: right;"><u>to FY 2001</u></td> <td style="text-align: right;"><u>FY 2001</u></td> <td style="text-align: right;"><u>FY 2002</u></td> <td style="text-align: right;"><u>FY 2003</u></td> <td style="text-align: right;"><u>Complete</u></td> <td style="text-align: right;"><u>Program</u></td> </tr> <tr> <td colspan="4">Subtotal Product Development</td> <td style="text-align: right;">1,615,082</td> <td style="text-align: right;">530,069</td> <td style="text-align: right;">414,451</td> <td style="text-align: right;">789,188</td> <td style="text-align: right;">2,133,754</td> <td style="text-align: right;">5,482,544</td> </tr> <tr> <td colspan="4">Subtotal Support and Management</td> <td style="text-align: right;">94,916</td> <td style="text-align: right;">20,075</td> <td style="text-align: right;">24,269</td> <td style="text-align: right;">25,739</td> <td style="text-align: right;">122,157</td> <td style="text-align: right;">287,156</td> </tr> <tr> <td colspan="4">Subtotal Test and Evaluation</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Total Project</td> <td style="text-align: right;">1,709,998</td> <td style="text-align: right;">550,144</td> <td style="text-align: right;">438,720</td> <td style="text-align: right;">814,927</td> <td style="text-align: right;">2,255,911</td> <td style="text-align: right;">5,769,700</td> </tr> </tbody> </table>						<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2001</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>	<u>Product Development Property</u>										Not Applicable										<u>Support and Management Property</u>										<u>Test and Evaluation Property</u>														<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	Subtotal Product Development				1,615,082	530,069	414,451	789,188	2,133,754	5,482,544	Subtotal Support and Management				94,916	20,075	24,269	25,739	122,157	287,156	Subtotal Test and Evaluation										Total Project				1,709,998	550,144	438,720	814,927	2,255,911	5,769,700
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